FlowSafe

FlowSafeTM (BeckerSmith Medical, Irvine, CA, USA) is a novel, robotic, external lumbar drainage (ELD) system, which was designed to control cerebrospinal fluid (CSF) drainage, reduce complications, and decrease treatment costs. METHODS: Forty-seven consecutive neurosurgical patients requiring ELD were treated using the FlowSafe system. RESULTS: In 39 of 40 patients with traumatic and surgical dural openings, potential CSF leaks were avoided. In seven patients with suspected normal pressure hydrocephalus, post-infectious ventriculomegaly, or pseudotumor cerebrum, we were able to assess the likelihood of improvement with shunting. The system, therefore, produced what we considered to be the “desired result” in 46 of 47 patients (98%). Our one treatment failure (2%) involved a patient with unrecognized hydrocephalus who, following a Chiari repair with a dural patch graft, was drained for six days. A persistent CSF leak eventually required a reoperation. Two patients (4%) described low-pressure headaches during treatment. Both responded to temporarily suspending or reducing the drainage rate. We saw no complications. Required nursing interventions were minimal. Conclusions: The FlowSafe system was safe and effective. In our experience, there were fewer complications compared to currently available ELD systems. The FlowSafe was well tolerated by our patients. The near elimination of nursing interventions should allow lumbar drainage to be delivered in less costly, non-intensive care unit settings. Larger trials will be needed [1)].

1)
Lieberson RE, Eckermann J, Meyer W, Trang T. An Automated, Gravity-driven CSF Drainage System Decreases Complications and Lowers Costs. Cureus. 2017 Feb 3;9(2):e1009. doi: 10.7759/cureus.1009. PubMed PMID: 28331772; PubMed Central PMCID: PMC5338987.